

Overhead 1.

“Stage Management for the Lake’s Ecology”

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Water Resources Advisory Commission**

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By

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Overhead 2.

Benefits of low water

Organic material decomposes (or burns)

Nutrients are released (from decomposition)

Seeds germinate

Light penetrates to bottom in deeper areas (good for submerged plants)

Prey concentrates—good for wading birds, waterfowl, predatory fish, alligators

Narration: periodic low water is good for wetlands/lakes

Overhead 3.

Lake Okeechobee Elevations

Marsh: 11-15 feet

Hoover Dike 15 feet

Run 25: 15.5-17.5 feet

WSE: 13.5-15.5+ feet

Narration: Because water regulation plan “Run 25” keeps the Lake levels above the marsh levels, the benefits of drawdowns are not realized. Water level management with WSE will be better for the Lake.

Overhead 4.

Lake Okeechobee plant zone elevations

Bulrush	10.1-10.7 feet
Submerged plants	~10.0 feet
Willows	13-14 feet
“Mixed Grass”	13-15 feet

(“optimum elevations” from Pesnell and Brown 1977)

Narration: Different plant communities grow at different elevations. All have valuable ecological functions and all require periodic low water.

Overhead 5.

Lake Okeechobee high water effects in the 1990s

Loss of about 50,000 acres of submerged plants

Loss of bulrush fringe along marsh

Decrease in willow and moist soil communities

Organic berm formed along marsh edge

Muck accumulation in marsh

Larval fish “disappearance”

Loss of Snail Kite nesting

Decrease in wading bird nesting

Decrease in wintering waterfowl

Narration: During a period that had almost low water events, Lake Okeechobee exhibited great environmental stress. Implementing “WSE” wisely has the potential to avoid these problems and restore much of the ecological health of the Lake.

Overhead 6.

Mean number of nesting wading birds at Lake Okeechobee pre- and post-regulation schedule change (P. David 1994).

Years	White Ibis	Great Egret	Snowy Egret	Glossy Ibis	G.B. Heron	Total
Pre-regulation 1957-1978	2810	1172	416	235	134	4767
Post-regulation 1979-1988	745	530	440	40	120	1928

Narration: Studies have documented that lower water periods (“Pre-regulation”—similar to a WSE-type schedule) have greater wading bird nesting on Lake Okeechobee than higher water periods (“Post-regulation”—similar to Run 25).

Overhead 7.

J. Smith 1994 (p. 39)

“foraging birds were less common during late surveys when surface-water levels were rising than during early surveys when water levels were declining. This was true despite the fact that areas of suitable depth were equally or more abundant late in the season.”

Narration: Not only do water levels need to lower periodically, they must do it in a “natural pattern” to gain maximum benefit for the ecosystem. For wading birds, continually receding water during the nesting season maximizes breeding potential.

Overhead 8.

Summary: healthy water levels for Lake Okeechobee

Water levels should not rise above 15 feet for extended periods

Water levels should drop to 13-14 feet in most years (MARSH: 5% dry at 14 feet; 42% dry at 13 feet)

Occasional (1 in ~10) drawdowns below 12 feet are helpful

Spring water levels should recede steadily, without large reversals

Narration: The above guidelines for a healthy Lake Okeechobee can be met with the WSE schedule without threatening the other water management needs of Lake Okeechobee (water supply, flood control). Note that water level recessions for a healthy Lake are needed at the same time that water users want to take the most water (in spring); this can create a win-win management of the Lake in most years.

Citations and further reference

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